

## **REMARKS**

Claims 1, 3-12, 14-15 and 20-22 are pending in the application.

Claim 17 stands cancelled from the application above.

Claim 8 is amended above to depend upon claim 4 instead of upon claim 1.

Claim 21 is amended above to require that “in operation” the internal surface of said cavity is constrained against radial displacement.

No new matter is added to the application by way of these claim amendments.

### **I. THE CLAIM OBJECTION**

The examiner objected to claim 17 for failing to further limit claim 15 upon which it depends.

The examiner’s objection is overcome by cancelling claim 17 from the application.

### **II. THE SECTION 112, SECOND PARAGRAPH REJECTION**

The examiner rejected claim 8 for being indefinite for reciting “the base plate” without sufficient antecedent basis.

The examiner’s rejection is overcome by amending claim 8 to depend upon claim 4 instead of upon claim 1.

### **III. TRAVERSE OF THE ANTICIPATION REJECTION**

Claims 21 and 22 stand rejected under 35 USC 102(b) as being anticipated by Thomas (WO 03/081186). The anticipation rejection is traversed at least because Thomas does not disclose a device having a cavity that is constrained against radial displacement. Additionally, the Applicant has amended claim 21 in a manner that further distinguishes it from Thomas.

#### **A. The Examiner’s Novelty Rejection Is Based Upon An Illogical Reading Of The Prior Art On The Claimed Invention**

The examiner’s rejection of claims 21-22 is without merit because it is based upon an illogical application of the prior art to the claimed invention. Indeed, the examiner’s rejection appears to be premised upon an interpretation of the claim term “constrained against radial displacement” made without consideration of the specification as a whole. The examiner must

determine the scope and meaning of claim terms not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1).

The examiner alleges that Taylor discloses a seismic mass having an internal cavity surface that is constrained against radial displacement because "the degree of constraint is not claimed and the claim does not require total radial displacement". The examiner concludes that Thomas's seismic mass prevents radial displacement of the internal surface of the cavity once the sides touch the mass thereby preventing further movement. The examiner's rejection is, however, based upon an illogical interpretation of the claim language and an illogical application of the prior art to the claim feature. In essence, the examiner is taking the position that when walls (12) of Thomas are radially displaced to the point where they contact seismic mass (23), the walls become constrained and cannot be further radially displaced. In other words, the examiner maintains that as soon as the device of Thomas is deformed to the point of non-operability it anticipates claims 21-22. Indeed, taking the examiner's position to its illogical conclusion, *any* internal surface of *any* hollow or cavity structure is constrained against radial displacement, as the two opposing sides will ultimately come into contact with one another. The Examiner's claim interpretation is illogical because it has the effect of reading the feature "the internal surface of said cavity is constrained against radial displacement" out of the claim 21. This is because, according to the examiner, the claim language "constrained against radial displacement" does not provide any further limitation to the claims than "a body ... having an internal cavity". For at least these reasons, claims 21-22 are not anticipated by Thomas.

#### **B. Amended Claim 21 Is Novel Over Thomas**

Claim 21 is amended above to require that "in operation" that the internal surface of the accelerometer cavity is constrained against radial displacement. This amendment also causes claims 21-22 to be novel over Thomas because Thomas does not disclose a device in which the internal surface is constrained against radial displacement during operation.

#### IV. THE OBVIOUSNESS REJECTION

The examiner rejected claims 1, 3-12, 14, 15, 17 and 20 for being obvious over the newly cited Taylor reference (US 5,134,882) in view of Thomas. Applicant respectfully disagrees because the examiner has not made out a *prima facie* case of obviousness. In particular, the teachings of the references alone or in combination would not lead a person of ordinary skill in the art to achieve the claimed invention. Moreover, in this instance, the combination of references the examiner suggests is nonsensical because a person of ordinary skill in the art faced with that teaching would not want to combine the references much less combine them as the examiner has.

Taylor describes a conventional compliant cylinder construction and is substantially identical to the prior art device illustrated in Figure 1 of the present application. In such a prior art device, the mass is suspended on a solid volume of compliant material and movement of the mass causes bulk displacement of the cylinder, which in turn produces strain in a fibre coil about the cylinder. In other words, the Taylor cylinder must move radially in order for the device to operate. Further, Thomas relates to a fundamentally different construction of fibre optic sensor. As noted in previous submissions, Thomas is a barrel stave construction. In such a device, a mass is mounted to a cylinder sliced into several staves. The cylinder is constructed of a rigid, typically metallic or plastic material (Thomas, page 6, lines 10-13), to adopt a particular concave geometry.

On page 6 of the Action, the Examiner states that “Thomas discloses a fibre optic accelerometer... arranged to prevent the cylinder deforming inwardly under axial compression”. In order to make out a *prima facie* case of obviousness, the examiner must show that all claim features are found expressly in the cited prior art or that they would be apparent to one skilled in the art at the time of the invention. The examiner has not shown that this claim feature is disclosed or apparent from the cited art because, as noted in Section III above, this claim feature is not expressly found or discussed in Thomas. Furthermore, this feature would not have been recognised by one skilled in the art at the time of the invention to be present in Thomas because it is not mentioned or recognised in any way in the Thomas specification, and because this feature must in fact be absent from Thomas for proper operation. It is only with hindsight of the present application that the Examiner has been able to find this feature of the claimed invention

in Thomas. The examiner, therefore, has failed to set forth a rational and logical factual basis for demonstrating that the prior art discloses or suggests this claim feature much less that a skilled person, appraised of Thomas, would have attempted to modify Taylor in any way which includes the feature that prevents inward deformation of an cylinder of compliant material.

The examiner's obviousness rejection is also without merit because the examiner's motivation for combining the references is illogical. As noted above, Thomas employs different materials, and different physical principles to Taylor. As a consequence of these differences, the overall configuration of the device is necessarily different, and the space inside the centre of the cylinder of Thomas can be used to house the mass. The Examiner justifies the combination of references on the basis that of a passage of Thomas which states "With the mass completely enclosed in the flexible shell, the overall size of the device can be reduced". It is respectfully considered that this passage is relied upon out of context. The immediately preceding passage of Thomas states "There is an inherent advantage in the use of this [barrel stave] design in that there is a cavity in the construction and this can be used to house the mass". Thomas therefore teaches that the cavity which houses the mass is a feature which is unique to the barrel stave construction. What the skilled person therefore learns from Thomas when considered as a whole is that in order to achieve the benefit of a mass housed within the cylinder, the barrel stave configuration (in contrast to the compliant cylinder construction) must be adopted. There is, therefore, no obvious reason why the skilled person would have attempted to modify Taylor in any way to include the feature that the mass is housed within a compliant cylinder and for at least this reason, the examiner's obviousness rejection of claims 1, 3-12, 14, 15, 17 and 20 must be withdrawn.

## **CONCLUSION**

All pending application claims are believed to be ready for patenting for at least the reasons recited above. Favorable reconsideration and allowance of all pending application claims is, therefore, courteously solicited.

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